

AMENDMENTS TO THE SPECIFICATION:

Please replace the first paragraph on page 11, beginning at line 3, with the following amended paragraph.

Figure 5 is a graph of the absorption and emission of $(\text{Ba,Sr})_3\text{MgSi}_2\text{O}_8:\text{Eu}^{2+},\text{Mn}^{2+}$. The emission spectrum used 405 nm light to excite the phosphor. The emission spectrum shows two emission peaks, the first at around 430-475 nm (corresponding to Eu^{2+} emission) and the second at around 610-700 nm (corresponding to Mn^{2+} emission). In addition to being quite efficient, this emission profile can be modified by varying the amount of Sr in the phosphor. Thus, as shown in figure 6, adding a greater percentage of Sr to the phosphor will shift the emission wavelength of the second emission peak to a longer wavelength. This results in a very versatile phosphor that can be used in a variety of applications by simply modifying the amount of individual components in the phosphor. This emission is quite preferred for generating red photons for use in deep red colored LEDs as well as the red component in a white light phosphor blend.

Please replace the third paragraph on page 11, beginning at line 21, with the following amended paragraph.

In a second embodiment, the phosphor composition includes a blend of the $(\text{Ba,Sr,Ca})_3\text{MgSi}_2\text{O}_8:\text{Eu}^{2+},\text{Mn}^{2+}$ phosphor described above and a green, blue and, optionally a blue-green, yellow-orange, and/or red emitting phosphor to create a white light emitting phosphor blend. Any known green and blue phosphor suitable for use in UV LED systems may be used. In addition to the green and blue phosphors, a yellow-orange and/or red phosphor may be used in the blend to customize the white color of the resulting light. Other blue-green, green, orange or additional phosphor may also be included based on the needs of the manufacturer. While not intended to be limiting, suitable phosphor for use in the blend with the $(\text{Ba,Sr,Ca})_3\text{Mg}_x\text{Si}_2\text{O}_8:\text{Eu}^{2+},\text{Mn}^{2+}$ phosphor include:

Please replace the second paragraph on page 13, beginning at line 16, with the following amended paragraph.

The relative amounts of each phosphor in the phosphor composition can be described in terms of spectral weight. The spectral weight is the relative amount that each phosphor contributes to the overall emission spectra of the phosphor blend when excited by UV light. The spectral weight amounts of all the individual phosphors should add up to 1. Although not intended to be limiting, the phosphor composition of the present invention may generally contain, in spectral weight amounts, about 0.01-0.3 of a blue phosphor, about 0.1-0.5 of a green phosphor, and the balance including the red $(\text{Ba}, \text{Sr}, \text{Ca})_3\text{MgSi}_2\text{O}_8:\text{Eu}^{2+}, \text{Mn}^{2+}$ phosphor and, optionally, a yellow-orange phosphor and/or an additional red phosphor. As stated, however, the exact identity and amounts of each phosphor in the phosphor composition can be varied according to the needs of the end user.

Please replace the first paragraph on page 14, beginning at line 1, with the following amended paragraph.

For example, in another embodiment, the $(\text{Ba}, \text{Sr}, \text{Ca})_3\text{MgSi}_2\text{O}_8:\text{Eu}^{2+}, \text{Mn}^{2+}$ phosphor can be used to generate red photons in an LCD backlight phosphor blend. Figure 8 shows a system 50 for back-lighting a LCD unit via a mixture of saturated LEDs. Figure 8 shows a side elevational view of an LCD unit 52 including a back-lighting unit 54 having a number, N, of saturated LEDs 56₁-56_N suitably mounted to emit radiation toward a back panel of LCD unit 52. In system 50, the LEDs 56₁-56_N may, for example, be chosen to be two groups of LEDs each emitting different saturated colors. The $(\text{Ba}, \text{Sr}, \text{Ca})_3\text{MgSi}_2\text{O}_8:\text{Eu}^{2+}, \text{Mn}^{2+}$ phosphor may be used to emit the red color for the backlight. The two colors are typically chosen so that they lie on a line on the CIE chromaticity diagram that contains therebetween the coordinates of the target color.

Please replace the Abstract of the application, with the following amended Abstract.

A light emitting device including a UV semiconductor light source and a phosphor blend including a blue emitting phosphor, a green emitting phosphor and a deep red emitting phosphor comprising $(\text{Ba}, \text{Sr}, \text{Ca})_3\text{Mg}_x\text{Si}_2\text{O}_8:\text{Eu}^{2+}, \text{Mn}^{2+}$, wherein $1 \leq x \leq 2$. Also disclosed is a phosphor blend comprising a blue emitting phosphor, a green emitting phosphor and a red emitting phosphor comprising $(\text{Ba}, \text{Sr}, \text{Ca})_3\text{Mg}_x\text{Si}_2\text{O}_8:\text{Eu}^{2+}, \text{Mn}^{2+}$.